UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,784	05/31/2000	Marcos N. Novaes	POU9-2000-0009-US1	4195

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EXAMINER
MAHMOUDI, HASSAN

ART UNIT	PAPER NUMBER
2175	

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

DP.
5/16/03

1)☒ Responsive to communication(s) filed on <u>05 March 2003</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and 121.

DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Remarks

1. In response to communications filed on 05-March-2003, new claim 25 has been added per

applicant's request. Therefore, claims 1-25 are pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, 11-13, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Dias et al (U.S. Patent No. 5,907,849) in view of Blott et al (U.S. Patent No. 6,449,618.)

As to claim 1, Dias et al teaches a method of recovery from failures within a shared

nothing (see Abstract) distributed computing environment (see column 1, lines 52-56), the

method comprising:

detecting a failure (see column 2, lines 46-49) within the shared nothing distributed

computing environment (see column 2, lines 30-35, where "computing environment" is read

on "database processing system"); and

recovering from the failure (see column 3, lines 23-28, and see column 4, lines 19-20.)

Dias et al does not teach automatically recovering from the failure, wherein one or more transactions affected by the failure are automatically executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions.

Blott et al teaches a real-time event processing system (see Abstract), in which he teaches automatically recovering from the failure (see column 8, lines 20-23, where "automatic event processing" is taught, and see column 27, lines 24-40, where "processing of events" include recovery of events from failure"), wherein one or more transactions affected by the failure are automatically executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions (see column 26, lines 3-8.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Dias et al to include automatically recovering from the failure, wherein one or more transactions affected by the failure are automatically executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Dias et al by the teaching of Blott et al, because automatically recovering from the failure, wherein one or more transactions affected by the failure are automatically executed to completion without rolling back the one or more transactions and without requiring a reposting of the one or more transactions, would make the recovery process faster and more efficient by avoiding manual intervention, rollback, or reposting of the recovered transactions.

As to claim 2, <u>Dias et al</u> teaches a system of recovery from failures within a shared

nothing (see Abstract) distributed computing environment (see column 1, lines 52-56), the

system comprising:

means for detecting a failure (see column 10, line 1) within the shared nothing distributed

computing environment (see column 2, lines 30-35, where "computing environment" is read

on "database processing system"); and

means for recovering from the failure (see column 12, lines 26-45.)

As to the remainder of claim 2, applicant is directed to the remarks and discussions made

in claim 1 above.

As to claim 3, <u>Dias et al</u> teaches at least one program storage device readable by a

machine (see figure 5), tangibly embodying at least one program of instructions executable

by the machine to perform (see column 6, lines 9-16) a method of recovery from failures (see

column 12, lines 26-45) within a shared nothing distributed computing environment (see

column 2, lines 30-35, where "computing environment" is read on "database processing

system".)

As to the remainder of claim 3, applicant is directed to the remarks and discussions made

in claims 1 and 2 above.

As to claims 4, 11, and 18, <u>Dias et al</u> as modified teaches wherein the shared nothing

distributed computing environment (see <u>Dias et al</u>, column 2, lines 30-35, where "computing

environment" is read on "database processing system") comprises a processing group with a

plurality of members (see Dias et al, figure 1, and see column 2, lines 38-42), and wherein

the detecting comprises detecting a failure of at least one of the plurality of members (see

Dias et al, column 10, lines 1-4.)

As to claims 5, 12, and 19, Dias et al as modified teaches wherein the recovering

comprises synchronizing messages regarding the one or more transactions among surviving

members of the processing group (see Dias et al, column 5, lines 44-52.)

As to claims 6, 13, and 20, Dias et al as modified teaches wherein the recovering further

comprises committing the one or more transactions (see Blott et al, column 26, lines 45-62.)

4.   Claims 7-10, 14-17, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Dias et al (U.S. Patent No. 5,907,849) in view of Blott et al (U.S. Patent No. 6,449,618)

as applied to claims 1-6, 11-13, and 18-20 above, and further in view of Badovinatz et al

(U.S. Patent No. 5,805,786.)

As to claims 7, 14, and 21, Dias et al as modified does not teach wherein at least one

member of the processing group survives the failure, and wherein the recovering comprises

electing a coordinator from among the at least one surviving member.

Badovinatz et al teaches recovery in a distributed computing environment (see Abstract),

in which he teaches wherein at least one member of the processing group survives the failure,

and wherein the recovering comprises electing a coordinator from among the at least one

surviving member (see Badovinatz et al, column 6, lines 1-7.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to have modified Dias et al as modified to include wherein at

least one member of the processing group survives the failure, and wherein the recovering

comprises electing a coordinator from among the at least one surviving member.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Dias et al as modified, by the teaching of Badovinatz et

al, because having at least one member of the processing group survives the failure, and

wherein the recovering comprises electing a coordinator from among the at least one

surviving member, would enable the system to pass the duties of the recovery node to at least

one of the nodes which survived the failure, in order for the surviving node to recover the

failed transactions.

As to claims 8, 15, and 22, Dias et al as modified teaches wherein the recovering further

comprises receiving by the coordinator a list of one or more transactions from other surviving

members (see Badovinatz et al, column 6, lines 15-23.)

As to claims 9, 16, and 23, Dias et al as modified teaches wherein the recovering further

comprises receiving by the coordinator any commit protocol messages (see Badovinatz et al,

column 4, line 58 through column 5, line 2) for the one or more transactions the coordinator

does not already have (see Badovinatz et al, column 6, lines 50-67.)

As to claims 10, 17, and 24, <u>Dias et al</u> as modified teaches wherein the coordinator

initiates the commit protocol for the one or more transactions (see <u>Badovinatz et al</u>, column

4, lines 35-41, and column 6, lines 42-46.)

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Dias et al</u> (U.S.

Patent No. 5,907,849) in view of <u>Blott et al</u> (U.S. Patent No. 6,449,618), as applied to claims

1-6, 11-13, and 18-20 above, and further in view of <u>Carter et al</u> (U.S. Patent No. 5,909,540.)

As to claim 25, <u>Dias et al</u> as modified teaches the shared nothing distributed computing

environment (see <u>Dias et al</u>, column 2, lines 30-35, where "computing environment" is read

on "database processing system".)

<u>Dias et al</u> as modified does not teach a distributed synchronous transaction system, and

wherein the method comprises a failure recovery method for the distributed synchronous

transaction system.

<u>Carter et al</u> teaches a highly available data storage system (see Abstract), in which he

teaches a distributed (see column 1, lines 15-18) synchronous transaction system, and

wherein the method comprises a failure recovery method for the distributed synchronous

transaction system (see column 32, lines 50-53, and see column 33, lines 19-24.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to have modified <u>Dias et al</u> as modified to include a distributed

synchronous transaction system, and wherein the method comprises a failure recovery

method for the distributed synchronous transaction system.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified <u>Dias et al</u> as modified, by the teaching of <u>Carter et al</u>,

because a distributed synchronous transaction system, and wherein the method comprises a

failure recovery method for the distributed synchronous transaction system, would enhance

the speed of transaction processing/updating, for example, high-priority, short-duration

items, such as records of a file, could be updated/replicated synchronously, for fast and

accurate results.

Response to Arguments

6. Applicant's arguments filed on 05-March-2003 with respect to the cited references have been

fully considered but they are not found to be persuasive:

In response to applicants' arguments that "obviousness determination requires an

evaluation of whether the prior art taken as a whole would suggest the claimed invention taken as

a whole to one of ordinary skill in the art", and that "recited subject matter would not have been

obvious to one of ordinary skill in the art based upon the applied patents", the arguments have

been fully considered but are not found to be persuasive, because it must be recognized that any

judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight

reasoning. But so long as it takes into account only knowledge which was within the level of

ordinary skill at the time the claimed invention was made, and does not include knowledge

gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re*

McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicants' arguments that the justification for the combination of patents in the office action "does not identify an adequate teaching, suggestion or incentive in the art itself for the combination proposed in the office action", and that "in this case, the basis for the combination is believed drawn from applicants' own disclosure", the arguments have been fully considered but are not found to be persuasive, because the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicants' arguments that the combination of Dias et al and Blott et al "fails to teach or suggest features of the recited invention", the arguments have been fully considered but are not found to be persuasive, because both cited references teach inventions that are in the same field of endeavor. The primary reference, Dias et al teaches a method and system for recovering from a failure of a processing node in a partitioned shared nothing database processing system, in which he teaches a distributed computing environment, a method of failure recovery within a shared nothing system, detecting and recovering from failures. The secondary reference, Blott et al teaches a real-time event processing system, in which automatic recovery from failure, without rolling back transactions, is taught. The applicants also noted this teaching in their remarks ("Blott et al. appear to discuss recovering from a failure without rolling back".) As to the "recovery without reposting of one or more transactions", Blott et al teaches "filtering

duplicate requests" in recovery, which implies that the recovery is done without "reposting" of

the transaction (see <u>Blott et al</u>, column 26, lines 6-8.) Therefore, the examiner is convinced that

it would have been obvious to a person having ordinary skill in the art to have modified and/or

combined the two inventions to reach the desired functionality of the applicants' invention, as

claimed in the independent claims 1-3.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office

action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The following patents are cited to further show the state of art with respect to methods

and systems of failure detection and failure recovery in general:

Patent No.	Issued to	Cited for teaching
US 5,440,727	Bhide et al.	Synchronous updates in a shared-nothing distributed system.
US 4,823,304	Frantz et al.	Synchronous updates in a shared-nothing distributed system.

9. Any inquiries concerning this communication or earlier communications from the examiner

should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The

examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

May 7, 2003

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